SIEMENS

SIREMOBIL/ARCADIS

SP

Replacements of Parts

System

Replacement of the Foot Brake Parts

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Print No.: SPR2-130.841.04.01.02
Replaces: n.a.

English
Doc. Gen. Date: 04.07

Document revision level

The document corresponds to the version/revision level effective at the time of system delivery. Revisions to hardcopy documentation are not automatically distributed.

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Safety Instructions

General safety information (in existing documents)

⚠WARNING

Danger of injuries, death or material damage.

Note

- **the product-specific safety notes in these instructions,**
- **the general safety information in TD00-000.860.01... and**
- **the safety information in accordance with ARTD part 2.**
- **Non-compliance can lead to death, injury or material damage.**

Mechanical safety information

⚠CAUTION

Risk of burns from hot parts or components! Failure to observe may result in minor to more severe burns, especially on the hands.

Parts and components (e.g., power components, cooling fins, electromagnetic brakes) that can exceed 50 degrees Celsius during operation are accessible after the covers are opened.

- **To avoid burns, switch the system off prior to touching parts or components and allow at least 5 minutes for cooling.**

⚠CAUTION

Risk of injury from mechanical parts! Failure to observe may result in minor to more severe injury, especially to the hands.

Once the cover panels are opened, parts such as flat plugs, threaded bolts, cut-off cable ties and component edges are exposed. If you are not careful, these can cause crushing, scrapes and cuts to the skin, particularly to the hands.

- **Perform the required work with special care and attention to detail.**
- **If necessary, wear work gloves.**

Safety information - risk of infection

⚠WARNING

Risk of infection due to pathogens! Non-compliance can lead to severe injury and even death.

This product can be contaminated by infected blood or other bodily fluids.

- ➪ **Avoid all contact with blood or other bodily fluids!**
- ➪ **Strictly observe the safety information in ARTD-002.731.37... regarding prevention of infectious diseases during customer service calls.**

Required Parts, Test Equipment, Tools and Aids

Required Parts

Foot brake repair set, material number 71 41 190

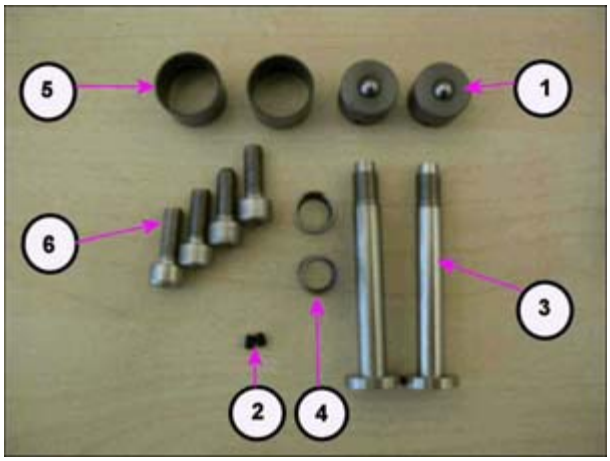

Fig. 1: Foot brake repair set

Pos. 1	Top part of brake bolt
Pos. 2	Allen screws for securing the top part of the brake bolt
Pos. 3	Lower part of brake bolt rust-free
Pos. 4	Pressure springs
Pos. 5	Sleeve bearing
Pos. 6	Allen screws rust-proof

Included in the repair set, not shown in the photo: Hex head rod approx. 800 mm in length

Required tools

Standard tool kit

1 set of Allen wrenches

Angled gaspipe pliers

Hacksaw (bow saw)

Required aids

Wooden block ca. 12cm x 14cm x 20cm (Width x Height x Length).

Loctite 242, material number 34 69 046

Mobil EPIX lubricant, material number 34 91 271

If required (oxidation damages), also needed:

Waterproof sandpaper, granulation 400

Waterproof sandpaper, granulation 800

Cleansing cloth (paper or cloth)

SIREMOBIL Compact/ Compact L Paint spray Medium Basic, material number 40 04 243

Number of persons required

During the repair work, the side beam of the transport frame has to be lifted and supported by a wooden block in order to make it possible to assemble/disassemble the wheels and brake parts.

To do this, two people are temporarily needed (for just a few minutes).

To remove the old brake bolts from the sleeve bearing, especially if they are already oxidized in the sleeve bearing, it is also helpful to have two people.

Improved, rust-proof parts

The parts included in the set are made of rust-proof material.

Always replace all parts included in the scope of delivery.

The improved parts have also been used in the newly produced systems since June 2007.

Left foot brake

Removing the foot brake pedal

Fig. 2: Loosening the attachment screw from the pedal axle

Fig. 3: Tapping out the pedal axis

- Loosen the side attachment screws on both pedals.
- Tap out the hex head rod (pedal axle) about 10 cm by tapping on the side.

NOTE

If the ends of the hex head rod (pedal axle) are heavily oxidized and therefore really difficult to remove from the foot brake pedal, completely remove the hex head rod (pedal axle) and replace it with a new one provided in the scope of delivery.

If the hex head rod is still in good condition and easily removed from the foot brake pedal, then it does not need to be replaced and can be reused.

- If needed (see note), completely remove / tap out the hex head rod and replace it with the one provided in the scope of delivery.

Fig. 4: Lifting the foot pedal

Fig. 5: ARCADIS Varic, lifting the cover panel

- Lift the foot brake pedal upwards.
- If the ARCADIS Varic is present, lift the foam panel cover as illustrated.
  - ➪ The guide piece for the hex head rod (pedal axle) is now accessible.

Lifting the transport frame

⚠WARNING

Risk of injury!

If the basic unit is tilted too far to the side, it may tip over completely and cause serious bodily injury or damage to property due to the heavy weight of the basic unit.

- ➪ **Tilt the basic unit very carefully and only as far on its side as you need to in order to move the wooden block under the side beam.**
- ➪ **With two people, tilt the basic unit.**
- ➪ **A third person is needed to move the wooden block under the side beam of the transport frame. When doing so, take hold of the wooden block on its sides only and place it under the beam, do not put your hands, arm or fingers under the side beam.**
- ➪ **Place the basic unit down on the wooden block.**

⚠WARNING

Risk of injury!

When placing the wooden block underneath the beam, take great care to avoid your fingers, hand or arm getting crushed.

- ➪ **When placing the wooden block under the side beam of the transport frame, take hold of the wooden block only on its sides and move under the beam.**
- ➪ **Do not put your fingers, hands or arms under the side beam.**

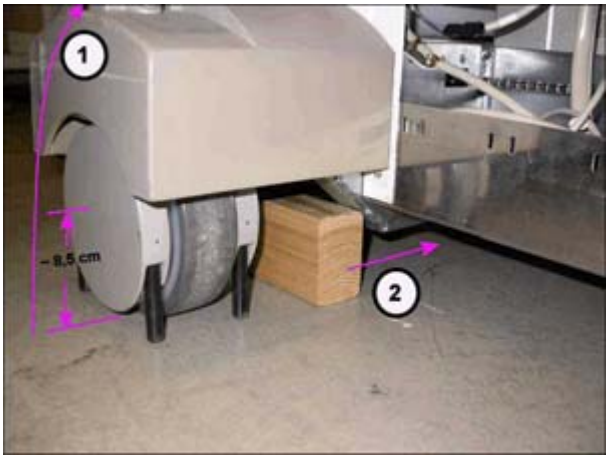

Fig. 6: Lifting the transport frame

Pos. 1 Tilting the transport frame in the direction of the arrow

Pos. 2 Moving the wooden block under the transport frame in the direction of the arrow

Fig. 7: Transport frame lifted and supported on the wooden block

- With two people, briefly tilt the basic unit.
- A third person is needed to move the wooden block from the sides underneath the transport frame.
- Lower the basic unit back down. The basic unit is left standing with the side beam of the transport frame on the wooden block.

Removing the wheel

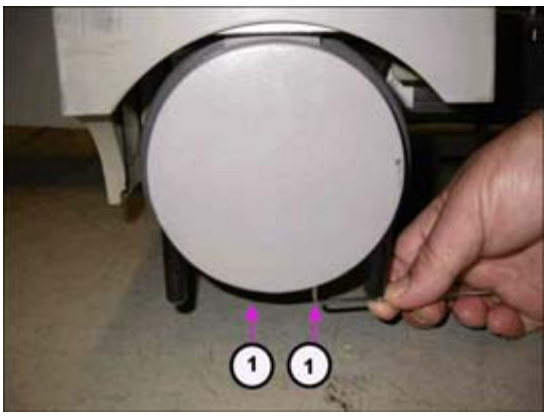

Fig. 8: Loosening the wheel retaining plates
Pos. 1 2x 2 2.5 mm Allen screws

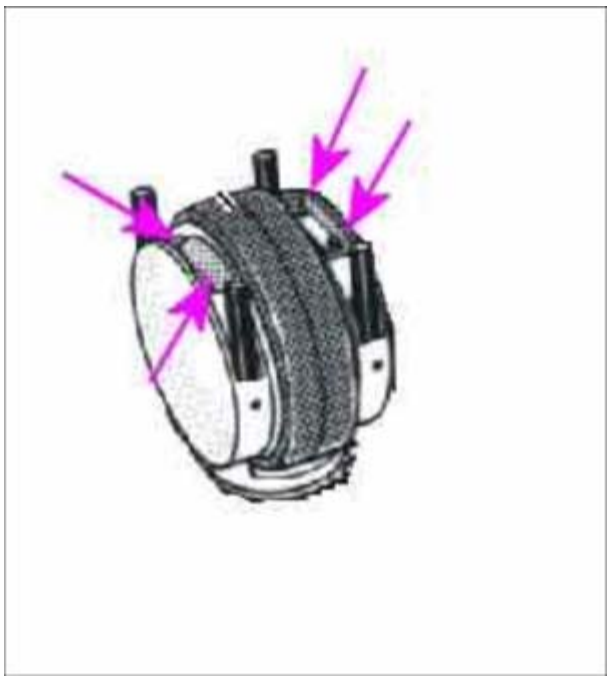

Fig. 9: Wheel from below, arrows indicate where the 2.5 mm Allen screws are located

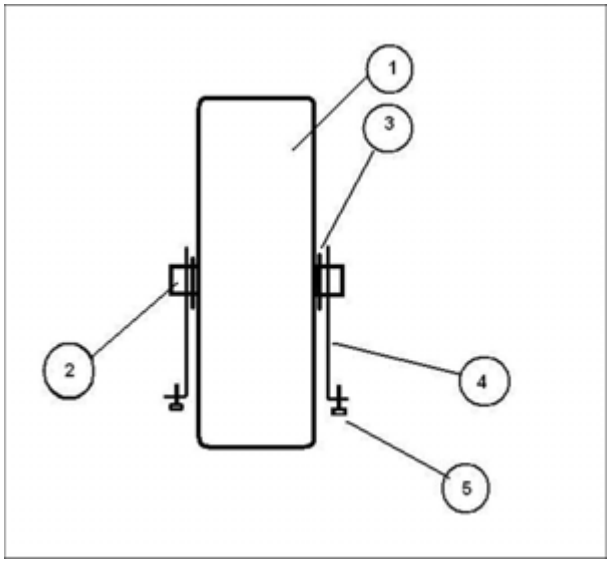

Fig. 10: Wheel without wheel holder
Pos. 1 Wheel
Pos. 2 Axle
Pos. 3 Washer on the axle
Pos. 4 Retaining plates
Pos. 5 2.5 mm Allen screws (2 left / 2 right)

- The wheel is attached on its side to the wheel holder using 2 wheel retaining plates which hold the wheel axle in place. Loosen both the 2.5 mm Allen screws from the retaining plates on both the right and left wheels.

  ➪ The wheel, including the axle, retaining plates and washers, fall off.

Removing the guide piece

Fig. 11: Loosening the foot pedal guide

Fig. 12: Lifting the guide piece

- Loosen both the Allen screws. See illustration
- Lift off the guide piece.

Fig. 13: Removing the old sleeve bearing from the guide piece

- Remove the old plastic sleeve bearing from the guide piece by pressing down on it.
- Remove any existing oxidation from the guide piece using sandpaper.
- Insert a new plastic sleeve bearing into the guide piece and lightly lubricate.

Remove the old pressure piece and brake bolt

Fig. 14: Loosening the Allen screw from the pressure piece

Fig. 15: Screwing the pressure piece off from the brake bolt

⚠CAUTION

Danger of deforming the brake bolts due to hammer blows.

If the brake bolts are deformed, these can no longer be removed from the sleeve bearing from below. The wheel bearing, incl. the brake bolt sleeve bearing, is welded onto the transport frame and cannot be replaced. In this case, repairs to the foot brake are possible, but very labor-intensive. It is possible to remove the deformed brake bolt by sawing it off with a metal hacksaw near the sleeve bearing and hammering out the rest of the bolt from the sleeve bearing.

➪ **Do NOT hammer the brake bolts from above without a pressure piece on top because doing so can deform the brake bolt and make it impossible to remove from the sleeve bearing from below!**

NOTE

If the brake bolt, incl. the pressure piece, is firmly fitted into the bearing and cannot be moved, lubricate the sleeve bearing above and below with oil and, BEFORE REMOVING THE PRESSURE PIECE, alternatively tap the top of the pressure piece lightly with a hammer and then against the brake bolt from below to make it move, repeat until it can move in the sleeve bearing.

- After lifting up the guide piece, the brake bolt with the mounted pressure piece is visible.
- Before removing the pressure piece (see pictures), press the brake bolt downward and check its ability to move inside the sleeve bearing. The brake bolt must be able to be moved in the sleeve bearing.
- If the brake bolt is firmly stuck in its sleeve bearing, lubricate the sleeve bearing on top and on the bottom. Lightly tap the brake bolt with a hammer from below and on the pressure piece from above to make it movable.

- The pressure piece is secured against loosening by the Allen screw screwed onto the brake bolt. Completely remove the Allen screw on the pressure piece. See illustration
- The pressure piece is screwed onto the brake bolt. Insert an Allen wrench (2 mm) into the threaded hole.
- Use pliers to grab hold of the brake bolt on the underside.
- Unscrew the pressure piece from the brake bolt in a downward direction.

  ➪ The brake bolt can then be pressed down on and removed.

NOTE

If the pressure piece no longer comes off the brake bolt, proceed as follows:

Ensure that the brake bolt can be moved vertically in the sleeve bearing.

Use pliers to grab hold of the brake bolt from the underside.

Saw off the brake bolt between the pressure piece and the sleeve bearing.

Then pull brake bolt down and out of the sleeve bearing.

Cleaning and lubricating the sleeve bearing and removing paint damage

- Clean rust and deposits off the sleeve bearing. To do this, you can use fine sandpaper and a nail file. Make sure you do not widen the diameter of the sleeve bearing, just clean it.
- Removing dirt residue.
- In case of paint damage and surface rust on the transport frame itself, use water to remove as much rust from it as possible, let it dry and then spray paint it. For paint work around the sleeve bearing, cover it up first to avoid paint getting into it.

NOTE

Do NOT paint the existing grounding bolts (potential balance) on the transport frame. If necessary, put tape on the grounding bolts first and then remove it again afterwards.

NOTE

The ARCADIS Varic System has a galvanized transport frame and over it a foam cover panel. If there are signs of rust on the transport frame, clean these off first with water.

If the the rust can be removed, then do not clean the transport frame with sandpaper, this allows the zinc coating to remain intact.

NOTE

For those systems on which aggressive surface disinfectants have been used, surface paint damage here and there and heavy instances of rust may appear on the transport frame.

Any extensive rust removal measures and paintwork have to be approved beforehand by the customer.

Complete elimination of oxidation damage is, in such cases, no longer possible.

Refurbishing such areas to perfect condition is possible, but requires great time and effort.

Further intensive use of aggressive surface disinfectants can cause renewed occurrences of oxidation damage.

Installing the new foot brake pedal

Fig. 16: Attaching the pressure piece onto the new brake bolts

Fig. 17: Attaching the guide piece to the side beam of the transport frame

- From underneath, press some lubricant into the sleeve bearing.
- Lightly lubricate a new brake bolt and insert it into the sleeve bearing from underneath.
- Lightly lubricate a new pressure spring and place it onto the top end of the brake bolt.
- Screw a new pressure piece onto the brake bolt. To do this, use pliers to take hold of the brake bolt from underneath. Place an Allen wrench in the threaded hole of the pressure piece and tighten the pressure piece.
- Screw the new Allen screw into the pressure piece. Coat the Allen screw beforehand using Loctite 242. Tighten the Allen screws.
- Place the guide piece back onto the side beam of the transport frame and screw on using the new rust-proof screws.
- For an existing ARCADIS Varic, place the foam cover panel back over the side beam of the transport frame.

Assembling the wheel

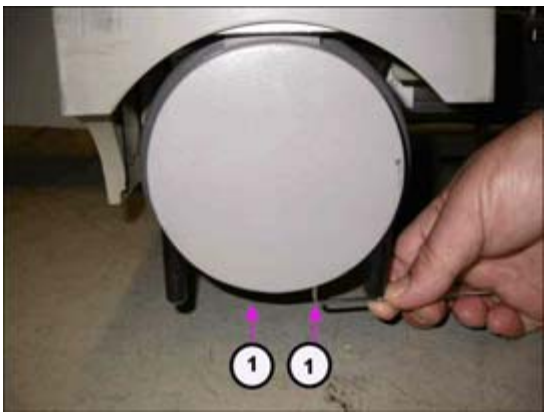

Fig. 18: Loosening the wheel retaining plates
Pos. 1 2x 2 2.5 mm Allen screws

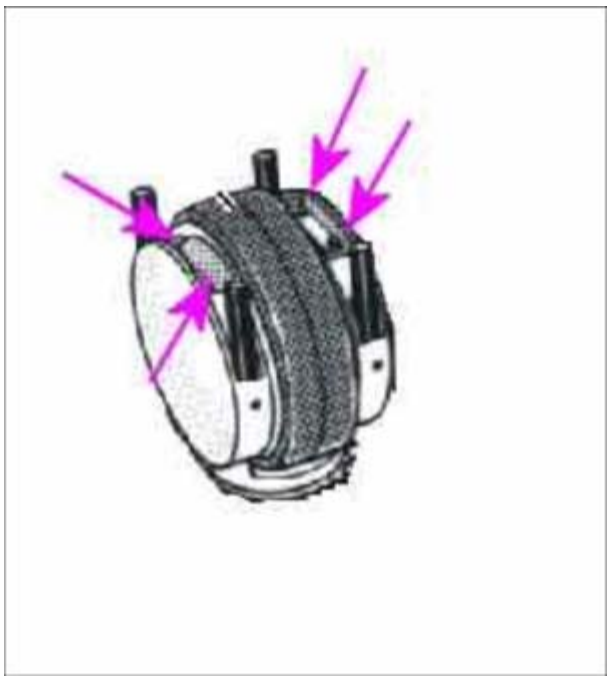

Fig. 19: Wheel from below, arrows indicate where the 2.5 mm Allen screws are located

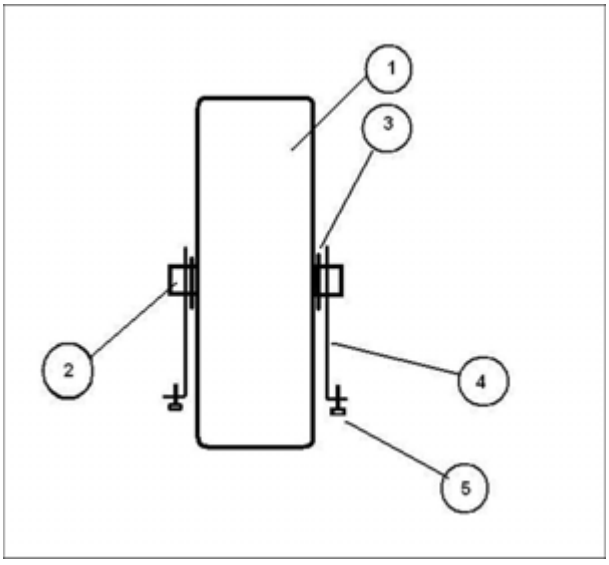

Fig. 20: Wheel without wheel holder
Pos. 1 Wheel
Pos. 2 Axle
Pos. 3 Washer on the axle
Pos. 4 Retaining plates
Pos. 5 2.5 mm Allen screws (2 left / 2 right)

- Place the wheel with axle, washers and retaining plates back onto the wheel holder from below and press completely upwards.

NOTE

In order for the wheel to be fully inserted upwards into the wheel holder, the wheel axle has to be centrally aligned. Also, both retaining plates have to lie tightly against the side of the wheel.

- Screw both right and left retaining plates back onto the wheel holder using the 2 Allen 2.5 mm screws.
  - ➪ The wheel is now re-assembled onto the wheel holder.

Removing the wooden block

⚠WARNING

Risk of injury!

If the basic unit is tilted too far to the side, it may tip over completely and cause serious bodily injury or damage to property due to the heavy weight of the basic unit.

- ➪ **Tilt the basic unit very carefully and only as far on its side as you need to in order to remove the wooden block from under the side beam.**
- ➪ **With two people, tilt the basic unit.**
- ➪ **A third person is needed to remove the wooden block from under the side beam of the transport frame. To do so, take hold of the wooden block only on its sides and remove to the side. Do not place your fingers, hands or arms underneath the side beam.**
- ➪ **Place the basic unit down on the floor.**

⚠WARNING

Risk of injury!

When removing the wooden block from underneath the beam, take great care to avoid getting your fingers, hand or arm crushed.

- ➪ **When removing the wooden block from under the side beam of the transport frame, take hold of the wooden block only from its sides and remove it from under the beam.**
- ➪ **Do not put your fingers, hands or arms under the side beam.**

Fig. 21: Transport frame lifted and supported on the wooden block

- With two people, briefly tilt the basic unit.
- A third person is needed to remove the wooden block from underneath the transport frame.
- Lower the basic unit back down. Place the basic unit back down on the floor.

Right foot brake parts

- Replace the right foot brake parts on the right side beam by following the above instructions for replacing the "left foot brake parts."

Final work steps

Re-assembling the hex head rod and pedal

- If necessary, use the new hex head rod.
- Insert the hex head rod from one side through the guide piece.
- Continue to push the hex head rod through the basic unit to the other side into the opposite guide piece. Only push the rod far enough for the foot brake pedal to be placed onto the guide piece via the brake bolt.
- After putting on the foot brake pedal, continue pushing the hex head rod through the pedal until the second foot brake pedal can be placed on the opposite side.
- After putting on the second foot brake pedal, continue to push the hex head rod through the second pedal until the rod is centrally positioned on both sides.
- Secure the hex head rod on both ends using Allen screws.

Functional test of the foot brake

- Press down on the foot brake pedals.
  - ➪ The foot brake pedals must be able to be moved into an inclined position and engage.
  - ➪ Both sides wheels of the basic unit are braked. The basic unit cannot be moved (only with great force and effort).
- Return the foot brake pedals to their neutral position.
  - ➪ The basic unit should be able to be moved.
  - ➪ All the wheels turn unobstructed.

Adjusting the foot brakes

NOTE

If the functional test for the foot brake pedals is successful, they don't need to be adjusted and you can skip this section.

If the foot brake does not function correctly, it can be adjusted as follows.

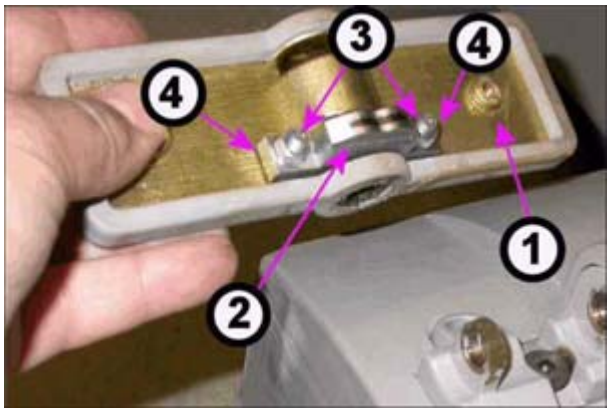

Fig. 22: Foot braking pedal

Pos. 1 Foot braking pedal
Pos. 2 Actuating cams
Pos. 3 Threaded bolt
Pos. 4 Spacer disk under actuating cams

If the foot brake is too soft:

- Remove the foot brake pedal on one side.
- Remove both nuts from the threaded bolts.
- Remove the actuating cams from the threaded bolts.
- For brakes that are too soft both on the left and right, place an M5 washer onto both of the threaded bolts.
- For brakes that are too hard left and right, remove an M5 washer from both of the threaded bolts.
- Place the actuating cams back onto the threaded bolts.
- Retighten both screws.
- Put the pedal back on.
- Repeat the function test for the foot brake.

NOTE

When adjusting the brakes, first adjust the left wheel brake, then do the right one so that both wheels have an equally strong braking function.

It may be that adding/removing two washers (one washer per threaded bolt) is too much. It may be necessary to remove/add only one washer to/from one threaded bolt. However, both threaded bolts should have about the same number of washers (a difference of no more than one washer).

- Lastly, secure the hex head rod on both ends using Allen screws.

24 Changes to previous version

Not applicable since new issue.